Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A digital adaptive equalizer for a data communication path, comprising:

a programmable infinite impulse response filter capable of being programmed to implement any of a plurality of infinite impulse response filter transfer functions;

a filter selector to select any one of said plurality of infinite impulse response filter transfer functions for said programmable infinite impulse response filter; and

a finite impulse response digital filter receiving an output from said programmable infinite impulse response filter.

2. (canceled)

3. (canceled)

4. (previously presented) The digital adaptive equalizer for a data communication path according to claim 1, wherein:

said finite impulse response digital filter adapts a transfer function to best fit an input data signal.

5. (original) The digital adaptive equalizer for a data communication path according to claim 4, wherein:

said transfer function is adapted based on a least mean square algorithm.

6. (original) The digital adaptive equalizer for a data communication path according to claim 1, wherein said data communication path comprises one of:

a T1 communication path; and

an E1 communication path.

7. (original) The digital adaptive equalizer for a data communication path according to claim 6, wherein:

said data communication path is formed by a twisted pair.

8. (original) The digital adaptive equalizer for a data communication path according to claim 6, wherein:

said data communication path is formed by a coaxial cable.

9. (original) The digital adaptive equalizer for a data communication path according to claim 6, wherein:

said data communication path is formed by a wireless RF medium.

10. (original) The digital adaptive equalizer for a data communication path according to claim 1, further comprising:

an analog-to-digital converter to digitize a received substantially raw T1/E1 signal for input to said digital adaptive equalizer.

11. (previously presented) The digital adaptive equalizer for a data communication path according to claim 1, wherein:

said plurality of transfer functions in said infinite impulse response filter are formed by a selection of any of at least four sets of coefficients available to said infinite impulse response filter.

12. (original) The digital adaptive equalizer for a data communication path according to claim 11, wherein:

one of said at least four sets of coefficients is selected based on a determination of a least amount of error in a received data signal.

13. (original) The digital adaptive equalizer for a data communication path according to claim 11, wherein:

an initial value of said at least four sets of coefficients is set to an autocorrelation function of an amplitude mark inversion, return to zero signal.

14. (previously presented) A method of digitally equalizing a received T1/E1 data signal, comprising:

firstly filtering said received T1/E1 data signal using a infinite impulse response digital filter; and

adaptively adjusting an output of said infinite impulse response digital filter to accurately match an inverse response of a transmission channel used to transmit said received T1/E1 data signal.

15. (original) The method of digitally equalizing a received T1/E1 data signal according to claim 14, further comprising:

detecting a periodic pattern in said received T1/E1 data signal.

16. (original) The method of digitally equalizing a received T1/E1 data signal according to claim 15, further comprising:

freezing said adaptive adjustment when a periodic pattern is detected.

17. (canceled)

18. (previously presented) The method of digitally equalizing a received T1/E1 data signal according to claim 14, wherein:

said adaptively adjusting step selects and implements one of a plurality of transfer function coefficients available for said infinite impulse response digital filter.

19. (original) The method of digitally equalizing a received T1/E1 data signal according to claim 18, wherein:

an initial value of said plurality of transfer function coefficients is set to an autocorrelation function of an amplitude mark inversion, return to zero signal.

20. (original) The method of digitally equalizing a received T1/E1 data signal according to claim 14, further comprising:

secondly filtering said firstly filtered received T1/E1 data signal.

21. (original) The method of digitally equalizing a received T1/E1 data signal according to claim 14, wherein:

said secondly filtering performs a finite impulse response transfer function on said firstly filtered received T1/E1 data signal.

22. (original) The method of digitally equalizing a received T1/E1 data signal according to claim 20, further comprising:

adaptively adjusting coefficients for said finite impulse response transfer function on a basis of a best fit algorithm.

23. (original) The method of digitally equalizing a received T1/E1 data signal according to claim 22, wherein:

said best fit algorithm is a least mean square algorithm.

24. (previously presented) Apparatus for digitally equalizing a received T1/E1 data signal, comprising:

means for firstly filtering said received T1/E1 data signal using an infinite impulse response digital filter; and

means for adaptively adjusting an output of said infinite impulse response digital filter to accurately match an inverse response of a transmission channel used to transmit said received T1/E1 data signal.

25. (canceled)

26. (previously presented) The apparatus for digitally equalizing a received T1/E1 data signal according to claim 24, wherein:

said means for adaptively adjusting selects and implements one of a plurality of transfer function coefficients available for said infinite impulse response digital filter.

27. (original) The apparatus for digitally equalizing a received T1/E1 data signal according to claim 24, further comprising:

means for secondly filtering said firstly filtered received T1/E1 data signal.

28. (original) The apparatus for digitally equalizing a received T1/E1 data signal according to claim 24, wherein said means for secondly filtering comprises:

a finite impulse response transfer function on said firstly filtered received T1/E1 data signal.

29. (original) The apparatus for digitally equalizing a received T1/E1 data signal according to claim 28, further comprising:

means for adaptively adjusting coefficients for said finite impulse response transfer function on a basis of a best fit algorithm.

30. (original) The apparatus for digitally equalizing a received T1/E1 data signal according to claim 29, wherein:

said best fit algorithm is a least mean square algorithm.